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ABSTRACT

The school district in Saginaw (Michigan) operates a supplemental-education delivery system in reading and mathematics that consists of elementary and secondary compensatory education. The elementary program is both a push-in and pull-out program that serves 1,819 students in grades one through five. The secondary program is a self-contained classroom program involving approximately 621 students in grades 6 through 8. Both are funded through Federal Chapter 1 funds. In 1993-94, approximately 2,440 students participated. In addition to the overall evaluation of achievement, this product evaluation focused on the Thinking Skills program (TSP) in grades 6 through 8. Two questionnaires, a structured interview, and a classroom-observation instrument were used to gather information relative to the TSP program. The California Achievement Test served as the overall evaluation instrument. Pre- and posttest results indicate that the greatest achievement gains occurred in grade 3 for reading and grade 2 for mathematics. Teachers had difficulty implementing TSP objectives, and participating TSP students still show low achievement, especially in reading. Recommendations are presented for program improvement. Five text tables plus 6 data tables in Appendix A and 12 in Appendix B present study findings. Appendix C contains a study checklist, Appendix D is a program description, and Appendix E is the 1993-94 Chapter 1/Article 3 buildings to submit reading and/or mathematics plans of improvement. (Contains 1 references.) (SLD)

EVALUATION REPORT

COMPENSATORY EDUCATION (CE) PRODUCT EVALUATION:

ELEMENTARY AND SECONDARY PROGRAMS

1993-94

DEPARTMENT OF EVALUATION SERVICES

- PROVIDING ASSESSMENT, PROGRAM EVALUATION AND RESEARCH SERVICES -

SCHOOL DISTRICT OF THE CITY OF SAGINAW

Saginaw, Michigan

COMPENSATORY EDUCATION (CE) PRODUCT EVALUATION:

ELEMENTARY AND SECONDARY PROGRAMS

1993-94

An Approved Report of the

DEPARTMENT OF EVALUATION, TESTING AND RESEARCH

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August, 1994

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Program Description

The School District of the City of Saginaw operates a supplemental educational delivery system in reading and mathematics consisting of two programs - elementary and secondary Compensatory Education (CE). The elementary CE is both a push-in program (that operates in the regular classroom) and a pull-out program (periodically taking students out of regular classrooms) that serves 1,819 students in grades one through five. The secondary CE is a self-contained classroom program which involved approximately 621 students in grades six through eight. The CE programs are funded by both the Federal Education Consolidation and Improvement Act (ECIA) Chapter 1 and Article 3 of the State School Aid Act.

Summarized in Table 1 below are demographic characteristics that describe both the elementary and secondary levels on CE in greater detail.

Table 1

Demographic Characteristics of the Compensatory Education (CE) Programs

Program	Demographic Characteristics						
	Grade Levels Served	Approximate Number of Students Served[a]	Number of Full-Time Equivalent Teachers	Number of Full-Time Equivalent Classroom Aides	Number of School Sites	Program Setting	Instructional Services
Academic Achievement, Elementary	1-5	1,819	38.0	23.0	23	Push-in and Pull-out	- Reading - Mathematics
Academic Achievement, Secondary	6-8	621	7.2	4.0	4	Self-Contained Classroom	- Thinking Skills

Note. N = 2,440 students.

[a]The Thinking Skills Program (TSP) operated in grades 6-8 as the reading and/or mathematics compensatory education program.

As can be seen from Table 1 above, the primary purpose of the programs is to improve the reading and mathematics achievement[1] of a designated number of educationally disadvantaged children. The children in the program are screened for entry with the California Achievement Tests -- Fifth Edition (CAT-5). This year approximately 2,440 pupils are participating in the compensatory education programs (see Appendix A for counts of pupils by building and grade).

This year there were six other program components in addition to the basic CE programs that were added to the overall program. These components included the following: Home-School Aides; Staff Development; Pupil Service Team; Elementary After-School/ Extended Day Program; Secondary After-School Tutoring grades 7 and 8; and Project Success. A description of each of these six components can be found in Appendix D.

The broad goals of these programs were to: 1) provide intensive academic instruction to the educationally disadvantaged, 2) involve parents in the program, 3) supply students with incentives for academic achievement, 4) operate staff inservice programs, 5) measure academic growth, and 6) prepare students to effectively meet the academic competition of the general classroom. These goals were the focus of the Compensatory Education Department's activities throughout the 1993-94 school year.

The focus of this product evaluation is upon the Thinking Skills Program (TSP) in grades 6-8. Table 2 below presents the gains and losses of the program over the past three years.

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[1]The Thinking Skills Program (TSP) is designed to increase thinking skills of sixth through eighth graders in such a way that basic skills (reading and mathematics) and social confidence also increases substantially. See Appendix C for a checklist for middle school principals interested.

Procedures for Evaluation

Both process and product evaluations were undertaken for the compensatory education delivery system. This year's product evaluation efforts focused on secondary CE program in grades 6-8. The program is in its fourth year of implementation and termed locally the Thinking Skills Program (TSP) or nationally the Higher Order Thinking Skills (HOTS) program (see Appendix C for a checklist for middle school principals interested in HOTS for a further in-depth operational description). Two questionnaires, a structured interview guide and a classroom observation instrument were used to gather information relative to the TSP program. All TSP teachers and their students were to be surveyed and each principal/assistant principal for instruction at the four middle schools were interviewed plus each compensatory education classroom teacher involved with the program was also observed. The results of these process activities were presented in a separate report published and disseminated earlier in the year.

The product evaluation, which is the focus of this report, addresses the results of student test performance. The California Achievement Tests (CAT-5 Form A) for grades 1-12 served as the evaluation instruments. These tests were administered in the Spring, 1993 (pre-test) and in Spring, 1994 (post-test).

Mean pre- to post-test score comparisons were used to evaluate the effectiveness of the delivery system. The agreed upon standard was an

improvement greater than three normal curve equivalent (NCE) points from pre- to post-testing.[2] The reading (both basic and advanced skills) and then the mathematics (both basic and advanced skills) results for the entire CE delivery system will be presented.[3]

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[2]A NCE is very similar to a percentile rank (ranging from 1 to 99 with a mean of 50) with the additional advantage of being based on an equal interval scale. Federal and State educational officials are increasing by requiring that outcome standards for compensatory education students be expressed in NCE units. The 1991-92 School Aid Act set the standards for student and school average gains to exceed two NCE units for 1991-92 and to exceed three NCE units for 1992-93 and subsequent school years.

[3]The use of advanced skills as a means to evaluate the progress of CE students represents a major change from past evaluation requirements which only required basic skills in reading and mathematics to be evaluated. The administrative rules that required the measurement of advanced skills also required "plans of improvement" from Chapter 1 buildings experiencing an average gain of three NCEs or less in one or more skill/subject areas served.

Presentation and Analysis of Data

The primary goal of compensatory education was to increase reading and mathematics achievement in both basic and advanced skill areas. The data presented in this section will indicate the extent to which this goal was achieved. Reading and then mathematics data by grade are presented below. Where relatively few students were tested at any grade level and for a building, the results should be viewed with caution.

The achievement results by school for the entire program and each funding source separately are presented in Appendix B.

Product Data: Reading Basic Skills

The pre- and post-test results for total reading are presented in Table 2.

Table 2

Attainment of the Performance Standard for Total Reading

Comparisons by Grade	# of Students Pre- to Post-Tested	Normal Curve Equivalents			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain	
2	215	27.9	27.2	-0.7	No
3	238	25.2	28.4	3.2	Yes
4	0	--	--	--	--
5	0	--	--	--	--
6	142	24.9	25.0	0.1	No
7	145	28.8	29.3	0.5	No
8	114	30.5	29.9	-0.6	No

Note. N = 854.

[a]Post-test NCE scores will evidence an improvement of more than three NCE points over pre-test scores.

A study of the reading results shows that students met the performance standard at third grade with a gain of 3.2 NCE points between pre- and post-testings. At the second grade level, the score indicated the largest average loss of -0.7 NCE points. See Appendix B for the test results by building and funding source.

Product Data: Reading Advanced Skills

The pre- and post-test results for reading comprehension are presented in Table 3.

Table 3

Attainment of the Performance Standard for Reading Comprehension

Comparisons by Grade	# of Students Pre- to Post-Tested	Normal Curve Equivalents			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain	
2	215	29.4	28.4	-1.0	No
3	238	26.3	31.0	4.7	Yes
4	0	--	--	--	--
5	0	--	--	--	--
6	142	28.8	27.3	-1.5	No
7	145	34.9	32.9	-2.0	No
8	114	36.3	31.6	-4.7	No

Note. N = 857.

[a]Post-test NCE scores will evidence an improvement of more than three NCE points over pre-test scores.

A review of the advanced skills in reading results show that students attained the performance standard at second grade with a gain of 4.7 NCE points. At the eighth grade level the scores revealed the largest loss of -4.7 NCE points between pre- and post-testings. See Appendix B for the test results by building and funding source.

Overall in the area of reading the standard that post-test NCE scores will exceed three NCE units was attained in only 2 of 10 (20.0%) grade levels for both basic reading skills and advanced reading skills respectively. The administrative rules that required the monitoring of progress in both basic and advanced skills also required "plans of improvement" from buildings experiencing aggregate gains of three NCE units or less in one or more skill areas served. See Appendix E for a listing of buildings that may need to develop a plan of improvement.

Product Data: Mathematics Basic Skills

Table 4 below presents the attainment of the performance standard for spring to spring data in grades 2-8 in total mathematics.

Table 4

Attainment of the Performance Standard for Total Mathamatics

Comparisons by Grade	# of Students Pre- to Post-Tested	Normal Curve Equivalents			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain	
2	328	23.5	32.1	8.6	Yes
3	234	27.4	32.0	4.6	Yes
4	116	22.2	26.1	3.9	Yes
5	158	26.9	28.3	1.4	No
6	108	27.2	28.4	1.2	No
7	80	26.8	26.4	-0.4	No
8	61	28.4	28.1	-0.3	No

Note. N = 1,085.

[a]Post-test NCE scores will evidence an improvement of more than three NCE points over pre-test scores.

A review of total mathematics results reveals that students met the performance standard in second, third, and fourth grades. The gain at the

second grade level, indicated the largest NCE improvement (8.6 points) between pre- and post-testings. At the seventh grade, the smallest acceptable positive NCE gain (-0.4 points) was observed. See Appendix B for the test results by building and funding source.

Product Data: Mathematics Advanced Skills

Table 5 below presents the attainment standard for students in grades 2-8 in mathematics concepts and applications.

Table 5

Attainment of the Performance Standard for Mathematics Concepts and Applications

Comparisons by Grade	# of Students Pre- to Post-Tested	Normal Curve Equivalents			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain	
2	328	30.9	32.9	2.0	No
3	234	32.0	30.6	-1.4	No
4	116	25.8	27.8	2.0	No
5	158	30.2	29.6	0.6	No
6	108	32.0	29.3	-2.7	No
7	80	29.3	26.6	-2.7	No
8	61	28.3	29.5	1.2	No

Note. N = 1,085.

[a]Post-test NCE scores will evidence an improvement of more than three NCE points over pre-test scores.

A study of the advanced mathematics skills results show that no grade level group of students attained the performance standard. At grade two and four, the largest positive gains (2.0 NCE points) were observed. At sixth and seventh grade levels the largest negative NCE gains (-2.7) can be observed. See Appendix B for the test results by building and funding source.

Overall in the area of mathematics the standard that post-test NCE scores will exceed three NCE units was attained in 3 of 7 (42.8%) and 0 of 7 (0.0%) grade levels for basic and advanced mathematics skills respectively. The administrative rules that required the monitoring of progress in both basic and advanced skills also required "plans of improvement" from buildings experiencing aggregate gains of three NCE units or less in one or more skill areas served. See Appendix E for a listing of buildings that may need to develop a plan of improvement.

Summary and Conclusions

The Chapter 1 and Article 3 Compensatory Education (CE) programs were designed to provide direct instructional services in reading and mathematics to some 2,440 students in grades one through eight. The main intent of the CE programs were to improve the pupil's reading and/or mathematics achievement. Instruction occurred primarily in small group settings outside of the regular classroom (pull-out) or push-in (that operated in the regular classroom in grades one and two) for CE at the elementary level, and in a regular classroom setting with a reduced number of students for CE at the secondary level.

The results of the pre- to post-testing of compensatory education students by grade indicate the overall greatest gains and attainment of the performance standards in reading were made at the third grade level. Mathematics gains were the greatest at grade two and the attainment of the performance occurred in grade 2 for total mathematics.

The 1993-94 compensatory education delivery system showed three increases from the previous years in terms of the percentage of grade levels meeting the standard. The chart below summarizes these changes.

	Percent Attaining Standard		
Area	1992-93	1993-94	Change Status
Basic Reading	9.1%	20.0%	Increase
Advanced Reading	9.1%	20.0%	Increase
Basic Mathematics	27.3%	42.8%	Increase
Advanced Mathematics	0.0%	0.0%	Unchanged

The increases shown in reading have probably come about by the use of the reading recovery program at grade one and the use of literacy groups in grades two and three. Likewise programatic changes have been started in mathematics.

These new programs hopefully will, with time and proper revisions, allow us to make gains of more than three NCEs for all students in each subtest area. This process of program improvement deserves our attention such that gains in student achievement will become a reality.

The new evaluation rules that required focusing the evaluation of both Chapter 1 on basic and advanced skills also required "plans of improvement" from buildings experiencing three NCE units or less in one or more skill/subject areas across all grades served. See Appendix E for a listing of buildings that may be required to submit a plan.

A series of recommendations follow that are offered in an effort to stimulate further program refinements/improvements.

Recommendations

The recommendations that follow are based on this year's process and product evaluations and are intended to help bring about Chapter 1/Article 3 program improvements in the following school year.

The ideas and techniques offered below stem from a perceived problem(s) and are just one of many ways to improve the performance of the program. As solutions are sought for optimum program operations, a dialogue/discussion should be undertaken to determine the best and most workable way to solve the perceived problem(s). The staff and evaluator should be brought into these discussions so that all involved feel part of the proposed new operation of the program.

- Reduce variations in the program between building sites by having the director and compensatory education staff analyze the building results presented in Appendix B. This analysis process should also involve building leaders and school improvement teams. Hopefully, a plan can be formulated to reduce (or control) these variations in program impact.

- Program leadership should determine why approximately 25% of the teachers had difficulty implementing TSP methods and potential remedies to make future full implementation easier.

- Participating TSP students still show low achievement levels especially in the area of reading. To allow the TSP program to better show achievement in reading, implementing optional program elements by TSP staff such as writing and answering eight questions at the end of each unit, etc. may be necessary.

- There should be a priority given to building in monies for the purchase of additional TSP computers/printers and related supplies in next year's budget or getting approval to purchase these computers/printers etc. with carry-over funds this school year.

- To help promote better understanding and communication with regular education teachers and principals, these staff members need to be allowed to practice TSP methods (meta-cognition, decision-making, and problem-solving) within their own classrooms. An inservice session relative to these methods/techniques needs to be scheduled for all middle school staff members.

- Steps that are now being planned to help increase the chances of all eligible students be scheduled into a TSP middle school classroom need to be carried out. These steps include the following: earlier production of updated participant listing, earlier completion of testing, and more prompt reporting of results to middle schools, etc.

APPENDICES

APPENDIX A

Table A-1

Count of Program Participants* for the Compensatory Education Program, 1993-94

Building	K	1	2	3	4	5	Total
E. Baillie	0	30	19	19	5	11	84
Coulter	0	2	22	9	1	6	40
Emerson	0	28	27	24	9	18	106
Fuerbringer	0	9	22	18	3	8	60
N. Haley	0	10	22	2	0	0	34
Handley	0	0	0	0	0	0	0
Heavenrich	0	15	22	29	12	16	94
Herig	0	12	26	12	9	10	69
Houghton	0	23	11	16	2	4	56
Jerome	0	9	16	7	3	3	38
Jones	0	30	12	12	0	0	54
Kempton	0	6	18	12	4	3	43
Longfellow	0	29	26	47	15	9	126
Longstreet	0	24	22	14	15	9	84
J. Loomis	0	44	51	25	13	10	143
M. Park	0	15	22	22	7	20	86
C. Miller	0	5	16	5	0	0	26
J. Moore	0	14	20	18	2	8	62
Morley	0	10	17	20	4	19	70
J. Rouse	0	8	16	14	5	10	53
Salina	0	14	16	19	5	1	55
Stone	0	18	17	24	14	11	84
Webber Elem.	0	41	40	44	6	14	145
Zilwaukee	0	1	1	4	0	1	7
TOTAL	0	397	481	416	134	191	1,619

*Count as of January 13, 1994 computer run that included all participants.

APPENDIX A

Table A-2

Count of Program Participants* for the Compensatory Education Program, 1993-94

Building	6	7	8	Total
Central Middle	73	63	53	189
North Middle	39	36	23	98
South Middle	41	43	59	143
Webber Middle	60	74	57	191
TOTAL	213	216	192	621

*Count as of January 13, 1994 computer run that included all participants.

Table A-3

Count of Program Participants* for the Chapter 1 Program, 1993-94

Building	K	1	2	3	4	5	Total
E. Baillie	0	30	19	19	5	11	84
Coulter	0	2	22	9	1	6	40
Emerson	0	28	27	24	9	18	106
Fuerbringer	0	9	22	18	3	8	60
N. Haley	0	10	22	2	0	0	34
Handley	0	0	0	0	0	0	0
Heavenrich	0	15	22	29	12	16	94
Herig	0	12	26	12	9	10	69
Houghton	0	23	11	16	2	4	56
Jerome	0	9	16	7	3	3	38
Jones	0	30	12	12	0	0	54
Kempton	0	6	18	12	4	3	43
Longfellow	0	29	26	47	15	9	126
Longstreet	0	24	22	14	15	9	84
J. Loomis	0	44	51	25	13	10	143
M. Park	0	15	22	22	7	20	86
C. Miller	0	5	16	5	0	0	26
J. Moore	0	14	20	18	2	8	62
Morley	0	10	17	20	4	19	70
J. Rouse	0	8	16	14	5	10	53
Salina	0	14	16	19	5	1	55
Stone	0	18	17	24	14	11	84
Webber Elem.	0	41	40	44	6	14	145
Zilwaukee	0	1	1	4	0	1	7
TOTAL	0	397	481	416	134	191	1,619

*Count as of January 13, 1994 computer run that included all participants.

APPENDIX A

Appendix A-4

Count of Program Participants* for the Chapter 1 Program, 1993-94

Building	6	7	8	Total
Central Middle	73	63	53	189
North Middle	39	36	23	98
South Middle	41	43	59	143
Webber Middle	60	74	57	191
TOTAL	213	216	192	621

*Count as of January 13, 1994 computer run that included all participants.

Table A-5

Count of Program Participants* for the Article 3 Program, 1993-94

Building	K	1	2	3	4	5	Total
E. Baillie	0	30	19	19	0	11	79
Coulter	0	2	22	9	0	6	39
Emerson	0	28	27	24	0	18	97
Fuerbringer	0	9	22	18	0	8	57
N. Haley	0	10	22	2	0	0	34
Handley	0	0	0	0	0	0	0
Heavenrich	0	15	22	29	0	16	82
Herig	0	12	26	12	0	10	60
Houghton	0	23	11	16	0	4	54
Jerome	0	9	16	7	0	3	35
Jones	0	30	12	12	0	0	54
Kempton	0	6	18	12	0	3	39
Longfellow	0	29	26	47	0	9	111
Longstreet	0	24	22	14	0	9	69
J. Loomis	0	44	51	25	0	10	130
M. Park	0	15	22	22	0	20	79
C. Miller	0	5	16	5	0	0	26
J. Moore	0	14	20	18	0	8	60
Morley	0	10	17	20	0	19	66
J. Rouse	0	8	16	14	0	10	48
Salina	0	14	16	19	0	1	50
Stone	0	18	17	24	0	11	70
Webber Elem.	0	41	40	44	0	14	139
Zilwaukee	0	1	1	4	0	1	7
TOTAL	0	397	481	416	0	191	1,485

*Count of January 13, 1994 computer run that included all participants.

APPENDIX A

Table A-6

Count of Program Participants* for the Article 3 Program, 1993-94

Building	6	7	8	Total
Central Middle	73	63	53	189
North Middle	39	36	23	98
South Middle	41	43	59	143
Webber Middle	60	74	57	191
TOTAL	213	216	192	621

*Count as of January 13, 1994 computer run that included all participants.

Attainment Status For Chapter 1 Pupils in Basic Skills Total Reading

Building	Grade K				Grade Jr. 1				Grade 1				Grade 2				Grade 3				Grade 4				Grade 5			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0	--	--	--	0	--	--	--	16	18.8	23.8	5.0	11	26.6	16.8	- 9.8	14	20.5	20.5	0.0	0	--	--	--	0	--	--	--
Coulter	0	--	--	--	0	--	--	--	4	19.0	38.0	19.0	8	31.6	37.8	6.2	5	25.8	29.4	3.6	0	--	--	--	0	--	--	--
Emerson	0	--	--	--	0	--	--	--	21	24.1	23.6	- 0.5	18	27.8	25.7	- 2.1	15	25.2	36.1	10.9	0	--	--	--	0	--	--	--
Fuerbringer	0	--	--	--	0	--	--	--	7	26.4	54.2	27.8	8	26.0	27.7	1.7	6	24.5	26.1	1.6	0	--	--	--	0	--	--	--
Haley	0	--	--	--	1	23.0	47.0	24.0	7	21.1	42.0	20.9	7	27.0	29.1	2.1	2	17.0	16.0	- 1.0	0	--	--	--	0	--	--	--
Handley	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--
Heavenrich	0	--	--	--	1	12.0	53.0	41.0	7	15.8	27.2	11.4	14	19.1	28.6	9.5	12	22.6	28.4	5.8	0	--	--	--	0	--	--	--
Herig	0	--	--	--	0	--	--	--	10	26.1	41.1	15.0	4	20.2	25.2	5.0	8	25.6	39.6	14.0	0	--	--	--	0	--	--	--
Houghton	0	--	--	--	4	26.7	40.5	13.8	11	24.4	36.6	12.1	8	26.7	26.7	0.0	12	24.8	20.5	- 4.3	0	--	--	--	0	--	--	--
Jerome	0	--	--	--	0	--	--	--	4	39.2	36.0	- 3.2	5	32.4	31.6	- 0.8	3	26.6	24.0	- 2.6	0	--	--	--	0	--	--	--
Jones	0	--	--	--	0	--	--	--	21	23.0	49.2	26.2	6	28.8	26.8	- 2.0	5	23.6	24.0	0.4	0	--	--	--	0	--	--	--
Kempton	0	--	--	--	0	--	--	--	5	30.4	47.4	17.0	6	36.0	35.3	- 0.7	2	23.5	13.0	-10.5	0	--	--	--	0	--	--	--
Longfellow	0	--	--	--	3	20.3	27.6	7.3	30	27.7	42.4	14.7	11	29.0	33.4	4.4	33	23.9	27.0	3.1	0	--	--	--	0	--	--	--
Longstreet	0	--	--	--	1	25.0	45.0	10.0	18	23.1	24.2	1.1	8	32.7	34.2	1.5	10	29.2	28.9	- 0.3	0	--	--	--	0	--	--	--
Loomis	0	--	--	--	1	22.0	43.0	21.0	29	21.3	27.3	6.0	20	26.3	21.1	- 5.2	15	25.0	24.6	0.4	0	--	--	--	0	--	--	--
M. Park	0	--	--	--	0	--	--	--	15	23.8	34.6	10.8	16	25.2	19.3	- 5.9	14	26.8	31.7	4.9	0	--	--	--	0	--	--	--
C. Miller	0	--	--	--	0	--	--	--	3	21.0	46.6	25.6	10	34.6	31.6	- 3.0	5	28.4	27.4	- 1.0	0	--	--	--	0	--	--	--
J. Moore	0	--	--	--	0	--	--	--	14	21.7	32.8	11.1	6	30.8	21.6	- 9.2	10	27.9	29.6	1.7	0	--	--	--	0	--	--	--
Morley	0	--	--	--	0	--	--	--	11	21.6	39.5	17.9	10	23.2	27.2	4.0	11	27.8	41.5	13.7	0	--	--	--	0	--	--	--
J. Rouse	0	--	--	--	1	28.0	33.0	5.0	10	26.2	33.1	6.9	6	30.1	26.1	- 4.0	8	25.6	23.6	- 2.0	0	--	--	--	0	--	--	--
Salina	0	--	--	--	0	--	--	--	14	18.6	17.2	- 1.3	11	30.3	25.6	- 4.7	8	22.1	22.0	- 0.1	0	--	--	--	0	--	--	--
Stone	0	--	--	--	1	19.0	38.0	19.0	17	25.8	39.2	13.4	5	36.0	40.2	4.2	17	25.8	28.8	2.9	0	--	--	--	0	--	--	--
Webber El.	0	--	--	--	0	--	--	--	30	24.8	30.8	6.0	17	27.8	29.1	1.3	21	27.9	32.8	4.9	0	--	--	--	0	--	--	--
Zilwaukee	0	--	--	--	0	--	--	--	1	34.0	31.0	- 3.0	0	--	--	--	2	24.5	30.5	6.0	0	--	--	--	0	--	--	--
TOTAL	0	--	--	--	13	22.8	38.7	15.9	305	23.6	34.0	10.4	215	27.9	27.2	- 0.7	238	25.2	28.4	3.2	0	--	--	--	0	--	--	--

Note. N = 772 students.

APPENDIX B

Attainment Status For Chapter 1 Pupils in Advanced Skills Reading Comprehension

Building	Grade K				Grade Jr. 1				Grade 1				Grade 2				Grade 3				Grade 4				Grade 5			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0	--	--	--	0	--	--	--	16	20.4	23.3	2.9	11	29.1	17.3	-11.8	14	21.7	21.7	0.0	0	--	--	--	0	--	--	--
Coulter	0	--	--	--	0	--	--	--	4	15.5	33.7	18.2	8	35.2	41.8	6.6	5	27.8	34.2	6.4	0	--	--	--	0	--	--	--
Emerson	0	--	--	--	0	--	--	--	21	28.7	22.1	- 6.6	18	29.0	27.3	- 1.7	15	27.5	35.4	7.9	0	--	--	--	0	--	--	--
Fuerbringer	0	--	--	--	0	--	--	--	7	29.1	56.2	27.1	8	23.6	25.3	1.7	6	23.3	26.5	3.1	0	--	--	--	0	--	--	--
Haley	0	--	--	--	1	24.0	49.0	25.0	7	25.0	37.7	12.7	7	27.0	29.8	2.8	2	16.0	14.5	- 1.5	0	--	--	--	0	--	--	--
Handley	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--
Heavenrich	0	--	--	--	1	8.0	56.0	48.0	7	14.8	25.0	10.2	14	18.6	28.2	9.5	12	21.9	30.7	8.8	0	--	--	--	0	--	--	--
Herig	0	--	--	--	0	--	--	--	10	29.8	39.1	9.3	4	15.2	25.7	10.5	8	25.2	43.8	18.6	0	--	--	--	0	--	--	--
Houghton	0	--	--	--	4	33.2	38.5	5.3	11	26.9	33.6	6.7	8	29.7	28.5	- 1.2	12	26.0	21.9	- 4.1	0	--	--	--	0	--	--	--
Jerome	0	--	--	--	0	--	--	--	4	48.2	35.5	-12.7	5	36.8	35.2	- 1.6	3	24.6	23.3	- 1.3	0	--	--	--	0	--	--	--
Jones	0	--	--	--	0	--	--	--	21	26.8	46.5	19.7	6	32.5	25.5	- 7.0	5	26.0	24.8	- 1.2	0	--	--	--	0	--	--	--
Kempton	0	--	--	--	0	--	--	--	5	34.2	51.0	16.8	6	37.8	37.6	- 0.2	2	25.5	12.5	-13.0	0	--	--	--	0	--	--	--
Longfellow	0	--	--	--	3	23.0	27.3	4.3	30	32.6	43.3	10.7	11	29.0	32.8	3.8	33	26.6	32.3	5.7	0	--	--	--	0	--	--	--
Longstreet	0	--	--	--	1	33.0	49.0	16.0	18	25.2	29.5	4.3	8	34.8	35.1	0.3	10	30.5	30.0	- 0.5	0	--	--	--	0	--	--	--
Loomis	0	--	--	--	1	24.0	53.0	29.0	29	24.0	24.5	0.5	20	27.2	23.8	- 3.4	15	24.2	25.2	1.0	0	--	--	--	0	--	--	--
M. Park	0	--	--	--	0	--	--	--	15	29.6	34.8	5.2	16	25.9	20.7	- 5.2	14	28.2	35.7	7.5	0	--	--	--	0	--	--	--
C. Miller	0	--	--	--	0	--	--	--	3	24.3	45.6	21.3	10	36.8	35.9	- 0.9	5	28.2	32.0	3.8	0	--	--	--	0	--	--	--
J. Moore	0	--	--	--	0	--	--	--	14	23.9	34.9	11.0	6	31.8	20.1	-11.7	10	28.3	35.8	7.5	0	--	--	--	0	--	--	--
Morley	0	--	--	--	0	--	--	--	11	26.0	41.3	15.2	10	27.5	27.3	- 0.2	11	30.7	41.3	10.6	0	--	--	--	0	--	--	--
J. Rouse	0	--	--	--	1	42.0	35.0	- 7.0	10	31.3	34.4	3.1	6	35.0	30.3	- 4.7	8	28.3	25.1	- 3.2	0	--	--	--	0	--	--	--
Salina	0	--	--	--	0	--	--	--	14	22.2	15.2	- 7.0	11	32.3	28.6	- 3.7	8	24.2	23.7	- 0.5	0	--	--	--	0	--	--	--
Stone	0	--	--	--	1	20.0	40.0	20.0	17	28.8	39.5	10.7	5	41.0	40.4	- 0.6	17	26.2	32.8	6.6	0	--	--	--	0	--	--	--
Webber El.	0	--	--	--	0	--	--	--	30	28.5	31.0	2.5	17	28.7	29.6	0.9	21	28.3	35.7	7.4	0	--	--	--	0	--	--	--
Zilwaukee	0	--	--	--	0	--	--	--	1	45.0	29.0	-16.0	0	--	--	--	2	25.5	32.0	6.5	0	--	--	--	0	--	--	--
TOTAL	0	--	--	--	13	27.1	39.8	12.7	305	27.1	33.7	6.6	215	29.4	28.4	- 1.0	238	26.3	31.0	4.7	0	--	--	--	0	--	--	--

Note. N = 772 students.

Table B-3

Attainment Status For Chapter 1 Pupils in Basic Skills Total Mathematics

Building	Grade 1 Normal Curve Equivalents				Grade 2 Normal Curve Equivalents				Grade 3 Normal Curve Equivalents				Grade 4 Normal Curve Equivalents				Grade 5 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
Baillie	0	--	--	--	11	9.8	18.3	8.5	7	20.2	21.1	0.9	4	28.7	24.2	- 4.5	6	25.3	23.6	- 1.7
Coulter	1	27.0	44.0	17.0	13	25.3	38.3	13.0	6	32.8	36.1	3.3	1	1.0	1.0	0.0	2	30.0	33.0	3.0
Emerson	0	--	--	--	17	15.4	26.8	11.4	19	22.1	33.3	11.2	7	10.0	22.1	12.1	13	22.6	19.2	- 3.4
Fuerbringer	0	--	--	--	19	25.6	29.0	3.4	10	29.8	32.5	2.7	3	24.3	21.3	- 3.0	8	31.0	35.3	4.3
Nelle Haley	0	--	--	--	16	31.6	46.4	14.8	0	--	--	--	1	20.0	18.0	- 2.0	0	--	--	--
Handley	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--
Heavenrich	0	--	--	--	13	15.9	24.0	8.1	18	26.0	34.4	8.4	9	20.1	24.6	4.5	13	26.3	27.0	0.7
Herig	0	--	--	--	20	23.8	34.0	10.2	6	30.1	31.5	1.4	9	33.6	37.4	3.8	8	38.3	39.3	1.0
Houghton	0	--	--	--	2	20.0	62.5	42.5	10	29.7	24.5	- 5.2	4	16.2	16.7	0.5	3	33.0	29.3	- 3.7
Jerome	0	--	--	--	11	26.3	31.5	5.2	3	35.6	33.6	- 2.0	4	24.5	29.0	4.5	1	30.0	32.0	2.0
Jones	0	--	--	--	7	17.5	33.7	16.2	4	22.0	26.2	4.2	0	--	--	--	1	38.0	30.0	- 8.0
Kempton	0	--	--	--	11	28.5	42.1	13.6	12	35.5	42.0	6.5	4	34.0	36.5	2.5	1	38.0	41.0	3.0
Longfellow	0	--	--	--	17	22.8	25.3	2.5	30	26.3	27.4	1.1	14	19.0	26.4	7.4	8	18.8	31.3	12.5
Longstreet	0	--	--	--	17	26.0	37.3	11.3	10	25.8	23.8	- 2.0	9	20.3	23.7	3.4	9	24.3	25.4	1.1
J. Loomis	0	--	--	--	35	22.4	26.8	4.4	15	28.4	32.6	4.2	10	16.0	17.6	1.6	12	25.0	21.8	- 3.1
Merrill Park	0	--	--	--	16	24.3	32.8	8.5	13	34.0	39.9	5.9	5	29.4	31.2	1.8	19	28.1	32.4	4.3
Chester Miller	0	--	--	--	3	18.0	23.3	5.3	0	--	--	--	0	--	--	--	0	--	--	--
John Moore	0	--	--	--	15	26.6	26.5	- 0.1	13	30.0	32.3	2.3	4	23.7	26.2	2.5	7	29.1	35.7	6.6
Morley	0	--	--	--	13	26.6	35.7	9.1	13	24.3	40.1	15.7	3	25.6	32.0	6.3	18	28.0	29.0	1.0
J. Rouse	0	--	--	--	10	25.2	40.4	15.2	7	20.0	12.8	- 7.2	5	19.6	26.0	6.4	7	25.7	20.8	- 4.9
Salina	0	--	--	--	14	25.5	28.6	3.1	8	25.6	29.0	3.4	4	25.0	33.0	8.0	1	32.0	28.0	- 4.0
Stone	0	--	--	--	14	31.9	34.0	2.1	11	27.1	32.4	5.3	13	25.1	27.1	2.0	9	25.0	30.5	5.5
Webber Ele.	0	--	--	--	34	21.6	34.5	12.9	18	27.7	38.0	10.3	3	20.0	26.3	6.3	11	23.6	23.3	- 0.3
Zilwaukee	0	--	--	--	0	--	--	--	1	40.0	34.0	- 6.0	0	--	--	--	1	32.0	43.0	11.0
TOTAL	1	27.0	44.0	17.0	328	23.5	32.1	8.6	234	27.4	32.0	4.6	116	22.2	26.1	3.9	158	26.9	28.3	1.4

Note. N = 837 students.

Table B-4

Attainment Status For Chapter 1 Pupils in Advanced Skills Mathematics Concepts and Applications

Building	Grade 1 Normal Curve Equivalents				Grade 2 Normal Curve Equivalents				Grade 3 Normal Curve Equivalents				Grade 4 Normal Curve Equivalents				Grade 5 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
Baillie	0	--	--	--	11	12.4	18.0	5.6	7	23.1	24.2	1.1	4	33.2	19.5	-13.7	6	24.6	22.6	- 2.0
Coulter	1	36.0	52.0	16.0	13	31.8	39.0	7.2	6	34.6	30.0	- 4.6	1	1.0	1.0	0.0	2	35.0	29.0	- 6.0
Emerson	0	--	--	--	17	23.4	25.6	2.2	19	27.0	22.4	- 4.6	7	12.2	19.5	7.3	13	24.0	17.3	- 6.7
Fuerbringer	0	--	--	--	19	34.4	30.8	- 3.6	10	33.9	34.2	0.3	3	29.3	26.6	- 2.7	8	32.3	39.3	7.0
Nelle Haley	0	--	--	--	16	41.8	43.6	1.8	0	--	--	--	1	35.0	23.0	-12.0	0	--	--	--
Handley	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--
Heavenrich	0	--	--	--	13	17.4	20.1	2.7	18	29.6	31.7	2.1	9	23.7	25.0	1.3	13	28.8	24.9	- 3.9
Herig	0	--	--	--	20	30.2	39.3	9.1	6	37.3	43.1	5.8	9	44.2	49.1	4.9	8	47.7	44.0	- 3.7
Houghton	0	--	--	--	2	31.0	68.0	37.0	10	34.3	23.3	-11.0	4	21.7	24.0	2.2	3	37.3	23.0	-14.3
Jerome	0	--	--	--	11	35.0	35.0	0.0	3	43.3	48.6	5.3	4	24.2	31.7	7.5	1	28.0	38.0	10.0
Jones	0	--	--	--	7	25.8	31.5	5.7	4	24.2	20.2	- 4.0	0	--	--	--	1	50.0	29.0	-21.0
Kempton	0	--	--	--	11	37.1	46.3	9.2	12	42.2	39.7	- 2.5	4	39.7	43.2	3.5	1	42.0	44.0	2.0
Longfellow	0	--	--	--	17	30.3	28.4	- 1.9	30	31.6	26.9	- 4.7	14	19.2	25.4	6.2	8	20.6	31.5	10.9
Longstreet	0	--	--	--	17	32.5	36.5	4.0	10	30.2	24.5	- 5.7	9	21.5	20.5	- 1.0	9	27.3	21.5	- 5.8
J. Loomis	0	--	--	--	35	29.7	29.0	- 0.7	15	32.1	31.0	- 1.1	10	20.4	17.5	- 2.9	12	25.9	24.9	- 1.0
Merrill Park	0	--	--	--	16	30.0	31.6	1.6	13	39.4	37.3	- 2.1	5	31.0	31.2	0.2	19	34.4	33.5	- 0.9
Chester Miller	0	--	--	--	3	14.0	15.3	1.3	0	--	--	--	0	--	--	--	0	--	--	--
John Moore	0	--	--	--	15	32.6	32.3	- 0.3	13	34.3	32.0	- 2.3	4	29.5	24.5	- 5.0	7	37.2	38.0	0.8
Morley	0	--	--	--	13	34.9	37.2	2.3	13	28.5	41.2	12.6	3	24.3	34.3	10.0	18	31.6	33.2	1.6
J. Rouse	0	--	--	--	10	33.7	44.1	10.4	7	23.2	14.5	- 8.7	5	21.8	32.2	10.4	7	29.8	26.8	- 3.0
Salina	0	--	--	--	14	31.8	29.1	- 2.7	8	27.2	30.2	3.0	4	25.2	32.2	7.0	1	36.0	31.0	- 5.0
Stone	0	--	--	--	14	40.9	31.7	- 9.2	11	32.9	30.5	- 2.4	13	31.3	31.1	- 0.2	9	26.8	34.0	7.2
Webber Ele.	0	--	--	--	34	31.6	33.4	1.8	18	32.4	34.4	2.0	3	21.6	28.6	7.0	11	25.0	24.5	- 0.5
Zilwaukee	0	--	--	--	0	--	--	--	1	53.0	32.0	-21.0	0	--	--	--	1	36.0	50.0	14.0
TOTAL	1	36.0	52.0	16.0	328	30.9	32.9	2.0	234	32.0	30.6	- 1.4	116	25.8	27.8	2.0	158	30.2	29.6	- 0.6

Note. N = 837 students.

APPENDIX B

Table B-5

Attainment Status For Chapter 1 Pupils in Basic Skills Total Reading and Advanced Skills Reading Comprehension

Subject/ School	Grade 6 Normal Curve Equivalents				Grade 7 Normal Curve Equivalents				Grade 8 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
Total Reading												
Central	48	22.4	23.1	0.7	39	29.1	30.5	1.4	32	25.0	25.7	0.7
North	25	27.2	27.8	0.6	14	29.9	28.4	-1.5	7	32.8	29.2	-3.6
South	29	28.5	32.2	3.7	32	30.3	32.8	2.5	39	37.3	36.2	-1.1
Webber	40	23.9	20.2	-3.7	60	27.6	26.9	-0.7	36	27.7	27.0	0.7
System	142	24.9	25.0	0.1	145	28.8	29.3	0.5	114	30.5	29.9	-0.6
Reading Comprehension												
Central	48	26.5	26.5	0.0	39	35.6	35.2	-0.4	32	31.7	28.1	-3.6
North	25	32.3	30.2	-2.1	14	34.1	34.2	0.1	7	38.2	31.4	-6.8
South	29	31.9	32.5	0.6	32	35.4	35.9	0.5	39	44.0	38.3	-5.7
Webber	40	27.2	22.6	-4.6	60	34.5	29.4	-5.1	36	31.7	27.5	-4.2
System	142	28.8	27.3	-1.5	145	34.9	32.9	-2.0	114	36.3	31.6	-4.7

Note. N = 401 students.

APPENDIX B

Table B-6

Attainment Status For Chapter 1 Pupils in Basic Skills Total Mathematics and Advanced Skills Mathematics Concepts and Applications

Subject/ School	Grade 6 Normal Curve Equivalents				Grade 7 Normal Curve Equivalents				Grade 8 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
Total Mathematics												
Central	39	25.0	24.2	-0.8	19	27.3	26.1	-1.2	20	28.7	24.4	-4.3
North	13	30.8	39.5	8.7	15	28.8	30.3	1.5	5	29.0	31.2	2.2
South	27	27.1	33.4	6.3	6	29.0	31.8	2.8	13	31.3	36.6	5.3
Webber	29	28.5	24.8	-3.7	40	25.4	24.4	-1.0	23	26.6	26.0	-0.6
System	108	27.2	28.4	1.2	80	26.8	26.4	-0.4	61	28.4	28.1	-0.3
Concepts and Applications												
Central	39	29.4	24.4	-5.0	19	29.3	25.0	-4.3	20	28.8	24.6	-4.2
North	13	36.0	40.9	4.9	15	30.8	31.0	0.2	5	32.8	35.8	3.0
South	27	32.7	36.0	3.3	6	31.8	33.1	1.3	13	31.9	39.7	7.8
Webber	29	33.1	24.5	-8.6	40	28.4	24.7	-3.7	23	25.0	26.7	1.7
System	108	32.0	29.3	-2.7	80	29.3	26.6	-2.7	61	28.3	29.5	1.2

Note. N = 249 students.

Attainment Status For Article 3 Pupils in Basic Skills Total Reading

Building	Grade K				Grade Jr. 1				Grade 1				Grade 2				Grade 3				Grade 4				Grade 5			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0	--	--	--	0	--	--	--	16	18.8	23.8	5.0	11	26.6	16.8	- 9.8	14	20.5	20.5	0.0	0	--	--	--	0	--	--	--
Coulter	0	--	--	--	0	--	--	--	4	19.0	38.0	19.0	8	31.6	37.8	6.2	5	25.8	29.4	3.6	0	--	--	--	0	--	--	--
Emerson	0	--	--	--	0	--	--	--	21	24.1	23.6	- 0.5	18	27.8	25.7	- 2.1	15	25.2	36.1	10.9	0	--	--	--	0	--	--	--
Fuerbringer	0	--	--	--	0	--	--	--	7	26.4	54.2	27.8	8	26.0	27.7	1.7	6	24.5	26.1	1.7	0	--	--	--	0	--	--	--
Haley	0	--	--	--	1	23.0	47.0	24.0	7	21.1	42.0	20.9	7	27.0	29.1	2.1	2	17.0	16.0	- 1.0	0	--	--	--	0	--	--	--
Handley	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--
Heavenrich	0	--	--	--	1	12.0	53.0	41.0	7	15.8	27.2	11.4	14	19.1	28.6	9.5	12	22.6	28.4	5.8	0	--	--	--	0	--	--	--
Herig	0	--	--	--	0	--	--	--	10	26.1	41.1	15.0	4	20.2	25.2	5.0	7	26.1	37.7	11.6	0	--	--	--	0	--	--	--
Houghton	0	--	--	--	4	26.7	40.5	13.8	11	24.4	36.6	12.2	8	26.7	26.7	0.0	12	24.8	20.5	- 4.3	0	--	--	--	0	--	--	--
Jerome	0	--	--	--	0	--	--	--	4	39.2	36.0	- 3.2	5	32.4	31.6	- 0.8	3	26.6	24.0	- 2.6	0	--	--	--	0	--	--	--
Jones	0	--	--	--	0	--	--	--	21	23.0	49.2	26.2	6	28.8	26.8	- 2.0	5	23.6	24.0	0.4	0	--	--	--	0	--	--	--
Kempton	0	--	--	--	0	--	--	--	5	30.4	47.4	17.0	6	36.0	35.3	- 0.7	2	23.5	13.0	-10.5	0	--	--	--	0	--	--	--
Longfellow	0	--	--	--	3	20.3	27.6	7.3	30	27.7	42.4	14.7	11	29.0	33.4	4.4	33	23.9	27.0	3.1	0	--	--	--	0	--	--	--
Longstreet	0	--	--	--	1	25.0	45.0	20.0	18	23.1	24.2	1.1	8	32.7	34.2	1.5	10	29.2	28.9	- 0.3	0	--	--	--	0	--	--	--
Loomis	0	--	--	--	1	22.0	43.0	21.0	29	21.3	27.3	6.0	20	26.3	21.1	- 5.2	15	25.0	24.6	- 0.4	0	--	--	--	0	--	--	--
M. Park	0	--	--	--	0	--	--	--	15	23.8	34.6	10.8	16	25.2	19.3	- 5.9	14	26.8	31.7	4.9	0	--	--	--	0	--	--	--
C. Miller	0	--	--	--	0	--	--	--	3	21.0	46.6	25.6	10	34.6	31.6	- 3.0	5	28.4	27.4	- 1.0	0	--	--	--	0	--	--	--
J. Moore	0	--	--	--	0	--	--	--	14	21.7	32.8	11.1	6	30.8	21.6	- 9.2	10	27.9	29.6	1.7	0	--	--	--	0	--	--	--
Morley	0	--	--	--	0	--	--	--	11	21.6	39.5	17.9	10	23.2	27.2	4.0	11	27.8	41.5	13.7	0	--	--	--	0	--	--	--
J. Rouse	0	--	--	--	1	28.0	33.0	5.0	10	26.2	33.1	6.9	6	30.1	26.1	- 4.0	8	25.6	23.6	- 2.0	0	--	--	--	0	--	--	--
Salina	0	--	--	--	0	--	--	--	14	18.6	17.2	- 1.4	11	30.3	25.6	- 4.7	8	22.1	22.0	- 0.1	0	--	--	--	0	--	--	--
Stone	0	--	--	--	1	19.0	38.0	19.0	17	25.8	39.2	13.4	5	36.0	40.2	4.2	17	25.8	28.8	2.9	0	--	--	--	0	--	--	--
Webber El.	0	--	--	-	0	--	--	--	30	24.8	30.8	6.0	17	27.8	29.1	1.3	21	27.9	32.8	4.9	0	--	--	--	0	--	--	--
Zilwaukee	0	--	--	--	0	--	--	--	1	34.0	31.0	- 3.0	0	--	--	--	2	24.5	30.5	6.0	0	--	--	--	0	--	--	--
TOTAL	0	--	--	-	13	22.8	38.7	15.9	305	23.6	34.0	10.4	215	27.9	27.2	- 0.7	237	25.2	28.3	3.1	0	--	--	--	0	--	--	--

Note. N = 770 students.

Attainment Status For Article 3 Pupils in Advanced Skills Reading Comprehension

Building	Grade K				Grade Jr. 1				Grade 1				Grade 2				Grade 3				Grade 4				Grade 5			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0	--	--	--	0	--	--	--	16	20.4	23.3	2.9	11	29.1	17.3	-11.8	14	21.7	21.7	0.0	0	--	--	--	0	--	--	--
Coulter	0	--	--	--	0	--	--	--	4	15.5	33.7	18.2	8	35.2	41.8	6.6	5	27.8	34.2	6.4	0	--	--	--	0	--	--	--
Emerson	0	--	--	--	0	--	--	--	21	28.7	22.1	- 6.6	18	29.0	27.3	- 1.7	15	27.5	35.4	7.9	0	--	--	--	0	--	--	--
Fuerbringer	0	--	--	--	0	--	--	--	7	29.1	56.2	27.1	8	23.6	25.3	1.7	6	23.3	26.5	3.2	0	--	--	--	0	--	--	--
Haley	0	--	--	--	1	24.0	49.0	25.0	7	25.0	37.7	12.7	7	27.0	29.8	2.8	2	16.0	14.5	- 1.5	0	--	--	--	0	--	--	--
Handley	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--
Heavenrich	0	--	--	--	1	8.0	56.0	48.0	7	14.8	25.0	10.2	14	18.6	28.2	9.5	12	21.9	30.7	8.8	0	--	--	--	0	--	--	--
Herig	0	--	--	--	0	--	--	--	10	29.8	39.1	9.3	4	15.2	25.7	10.5	7	25.4	41.8	16.4	0	--	--	--	0	--	--	--
Houghton	0	--	--	--	4	33.2	38.5	5.3	11	26.9	33.6	6.7	8	29.7	28.5	- 1.2	12	26.0	21.9	- 4.1	0	--	--	--	0	--	--	--
Jerome	0	--	--	--	0	--	--	--	4	48.2	35.5	-12.7	5	36.8	35.2	- 1.6	3	24.6	23.3	- 1.3	0	--	--	--	0	--	--	--
Jones	0	--	--	--	0	--	--	--	21	26.8	46.5	19.7	6	32.5	25.5	- 7.0	5	26.0	24.8	- 1.2	0	--	--	--	0	--	--	--
Kempton	0	--	--	--	0	--	--	--	5	34.2	51.0	16.8	6	37.8	37.6	- 0.2	2	25.5	12.5	-13.0	0	--	--	--	0	--	--	--
Longfellow	0	--	--	--	3	23.0	27.3	4.3	30	32.6	43.3	10.7	11	29.0	32.8	3.8	33	26.6	32.3	5.7	0	--	--	--	0	--	--	--
Longstreet	0	--	--	--	1	33.0	49.0	16.0	18	25.2	29.5	4.3	8	34.8	35.1	0.3	10	30.5	30.0	- 0.5	0	--	--	--	0	--	--	--
Loomis	0	--	--	--	1	24.0	53.0	29.0	29	24.0	24.5	0.5	20	27.2	23.8	- 3.4	15	24.2	25.2	1.0	0	--	--	--	0	--	--	--
M. Park	0	--	--	--	0	--	--	--	15	29.6	34.8	5.2	16	25.9	20.7	- 5.2	14	28.2	35.7	7.5	0	--	--	--	0	--	--	--
C. Miller	0	--	--	--	0	--	--	--	3	24.3	45.6	21.3	10	36.8	35.9	- 0.9	5	28.2	32.0	3.8	0	--	--	--	0	--	--	--
J. Moore	0	--	--	--	0	--	--	--	14	23.9	34.9	11.0	6	31.8	20.1	-11.7	10	28.3	35.8	7.5	0	--	--	--	0	--	--	--
Morley	0	--	--	--	0	--	--	--	11	26.0	41.3	15.3	10	27.5	27.3	- 0.2	11	30.7	41.3	10.6	0	--	--	--	0	--	--	--
J. Rouse	0	--	--	--	1	42.0	35.0	- 7.0	10	31.3	34.4	3.1	6	35.0	30.3	- 4.7	8	28.3	25.1	- 3.2	0	--	--	--	0	--	--	--
Salina	0	--	--	--	0	--	--	--	14	22.2	15.2	- 7.0	11	32.3	28.6	- 3.7	8	24.2	23.7	- 0.5	0	--	--	--	0	--	--	--
Stone	0	--	--	--	1	20.0	40.0	20.0	17	28.8	39.5	10.7	5	41.0	40.4	- 0.6	17	26.2	32.8	6.6	0	--	--	--	0	--	--	--
Webber El.	0	--	--	--	0	--	--	--	30	28.5	31.0	2.5	17	28.7	29.6	0.9	21	28.3	35.7	7.4	0	--	--	--	0	--	--	--
Zilwaukee	0	--	--	--	0	--	--	--	1	45.0	29.0	-16.0	0	--	--	--	2	25.5	32.0	6.5	0	--	--	--	0	--	--	--
TOTAL	0	--	--	--	13	27.1	39.8	12.7	305	27.1	33.7	6.6	215	29.4	28.4	- 1.0	237	26.3	30.8	4.5	0	--	--	--	0	--	--	--

Note. N = 770 students.

APPENDIX B

Table B-9

Attainment Status For Article 3 Pupils in Basic Skills Total Mathematics

Building	Grade 1 Normal Curve Equivalents				Grade 2 Normal Curve Equivalents				Grade 3 Normal Curve Equivalents				Grade 4 Normal Curve Equivalents				Grade 5 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
Baillie	0	--	--	--	11	9.8	18.3	8.5	7	20.2	21.1	0.9	0	--	--	--	6	25.3	23.6	- 1.7
Coulter	1	27.0	44.0	17.0	13	25.3	38.3	13.0	6	32.8	36.1	3.3	0	--	--	--	2	30.0	33.0	3.0
Emerson	0	--	--	--	17	15.4	26.8	11.4	19	22.1	33.3	11.2	0	--	--	--	13	22.6	19.2	- 3.4
Fuerbringer	0	--	--	--	19	25.6	29.0	3.4	10	29.8	32.5	2.7	0	--	--	--	8	31.0	35.3	4.3
Nelle Haley	0	--	--	--	16	31.6	46.4	14.8	0	--	--	--	1	20.0	18.0	- 2.0	0	--	--	--
Handley	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--
Heavenrich	0	--	--	--	13	15.9	24.0	8.1	18	26.0	34.4	8.4	0	--	--	--	13	26.3	27.0	0.7
Herig	0	--	--	--	20	23.8	34.0	10.2	6	30.1	31.5	1.4	0	--	--	--	6	38.3	39.3	1.0
Houghton	0	--	--	--	2	20.0	62.5	42.5	10	29.7	24.5	- 5.2	0	--	--	--	3	33.0	29.3	- 3.7
Jerome	0	--	--	--	11	26.3	31.5	5.2	3	35.6	33.6	- 2.0	1	22.0	24.0	2.0	1	30.0	32.0	2.0
Jones	0	--	--	--	7	17.5	33.7	16.2	4	22.0	26.2	4.2	0	--	--	--	1	38.0	30.0	- 8.0
Kempton	0	--	--	--	11	28.5	42.1	13.6	12	35.5	42.0	6.5	0	--	--	--	1	38.0	41.0	3.0
Longfellow	0	--	--	--	17	22.8	25.3	2.5	30	26.3	27.4	1.1	0	--	--	--	8	18.8	31.3	12.5
Longstreet	0	--	--	--	17	26.0	37.3	11.3	10	25.8	23.8	- 2.0	0	--	--	--	9	24.3	25.4	1.1
J. Loomis	0	--	--	--	35	22.4	26.8	4.4	15	28.4	32.6	4.2	0	--	--	--	12	25.0	21.8	- 3.2
Merrill Park	0	--	--	--	16	24.3	32.8	8.5	13	34.0	39.9	5.9	0	--	--	--	19	28.1	32.4	4.3
Chester Miller	0	--	--	--	3	18.0	23.3	5.3	0	--	--	--	0	--	--	--	0	--	--	--
John Moore	0	--	--	--	15	26.6	25.5	0.1	13	30.0	32.3	2.3	2	30.0	31.5	1.5	7	29.1	35.7	6.6
Morley	0	--	--	--	13	26.6	35.7	9.1	13	24.3	40.1	15.8	0	--	--	--	18	28.0	29.0	1.0
J. Rouse	0	--	--	--	10	25.2	40.4	15.2	7	20.0	12.8	- 7.1	1	36.0	32.0	- 4.0	7	25.7	20.8	- 4.9
Salina	0	--	--	--	14	25.5	28.6	3.1	8	25.6	29.0	3.4	0	--	--	--	1	32.0	28.0	- 4.0
Stone	0	--	--	--	14	31.9	34.0	2.1	11	27.1	32.4	5.2	0	--	--	--	9	25.0	30.5	5.5
Webber Ele.	0	--	--	--	34	21.6	34.5	12.9	18	27.7	38.0	10.3	0	--	--	--	11	23.6	23.3	- 0.3
Zilwaukee	0	--	--	--	0	--	--	--	1	40.0	34.0	- 6.0	0	--	--	--	1	32.0	43.0	11.0
TOTAL	1	27.0	44.0	17.0	328	23.5	32.1	8.6	234	27.4	32.0	4.6	5	27.6	27.4	- 0.2	158	26.9	28.3	1.4

Note. N = 726 students.

Table B-10

Attainment Status For Article 3 Pupils in Advanced Skills Mathematics Concepts and Applications

Building	Grade 1 Normal Curve Equivalents				Grade 2 Normal Curve Equivalents				Grade 3 Normal Curve Equivalents				Grade 4 Normal Curve Equivalents				Grade 5 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
Baillie	0	--	--	--	11	12.4	18.1	5.7	7	23.1	24.2	1.1	0	--	--	--	6	24.6	22.6	2.0
Coulter	1	36.0	52.0	16.0	13	31.8	39.0	7.2	6	34.6	30.0	- 4.6	0	--	--	--	2	35.0	29.0	- 6.0
Emerson	0	--	--	--	17	23.4	25.6	2.2	19	27.0	22.4	- 4.6	0	--	--	--	13	24.0	17.3	- 6.7
Fuerbringer	0	--	--	--	19	34.4	30.8	- 3.6	10	33.9	34.2	0.3	0	--	--	--	8	32.3	39.3	7.0
Nelle Haley	0	--	--	--	16	41.8	43.6	1.8	0	--	--	--	1	35.0	23.0	-12.0	0	--	--	--
Handley	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--	0	--	--	--
Heavenrich	0	--	--	--	13	17.4	20.1	2.7	18	29.6	31.7	2.1	0	--	--	--	13	28.8	24.9	- 3.9
Herig	0	--	--	--	20	30.2	39.3	9.1	6	37.3	43.1	5.8	0	--	--	--	8	47.7	44.0	- 3.7
Houghton	0	--	--	--	2	31.0	68.0	37.0	10	34.3	23.3	-11.0	0	--	--	--	3	37.3	23.0	-14.3
Jerome	0	--	--	--	11	35.0	35.0	0.0	3	43.3	48.6	5.3	1	18.0	23.0	5.0	1	28.0	38.0	10.0
Jones	0	--	--	--	7	25.8	31.5	5.7	4	24.2	20.2	- 4.0	0	--	--	--	1	50.0	29.0	-21.0
Kempton	0	--	--	--	11	37.1	46.3	9.2	12	42.2	39.7	- 2.5	0	--	--	--	1	42.0	44.0	2.0
Longfellow	0	--	--	--	17	30.3	28.4	- 1.9	30	31.6	26.9	- 4.7	0	--	--	--	8	20.6	31.5	10.9
Longstreet	0	--	--	--	17	32.5	36.5	4.0	10	30.2	24.5	- 5.7	0	--	--	--	9	27.3	21.5	- 5.8
J. Loomis	0	--	--	--	35	29.7	29.0	- 0.7	15	32.1	31.0	- 1.1	0	--	--	--	12	25.9	24.9	- 1.0
Merrill Park	0	--	--	--	16	30.0	31.6	1.6	13	39.4	37.3	- 2.1	0	--	--	--	19	34.4	33.5	- 0.9
Chester Miller	0	--	--	--	3	14.0	15.3	1.3	0	--	--	--	0	--	--	--	0	--	--	--
John Moore	0	--	--	--	15	32.6	32.3	- 0.3	13	34.3	32.0	- 2.3	2	35.0	30.5	- 4.5	7	37.2	38.0	0.8
Morley	0	--	--	--	13	34.9	37.2	2.3	13	28.5	41.2	12.7	0	--	--	--	18	31.6	33.2	1.6
J. Rouse	0	--	--	--	10	33.7	44.1	10.4	7	23.2	14.5	- 8.7	1	44.0	32.0	-12.0	7	29.8	26.8	- 3.0
Salina	0	--	--	--	14	31.8	29.1	- 2.7	8	27.2	30.2	3.0	0	--	--	--	1	36.0	31.0	- 5.0
Stone	0	--	--	--	14	40.9	31.7	- 9.2	11	32.9	30.5	- 2.4	0	--	--	--	9	26.8	34.0	7.2
Webber Ele.	0	--	--	--	34	31.6	33.4	1.8	18	32.4	34.4	2.0	0	--	--	--	11	25.0	24.5	- 0.5
Zilwaukee	0	--	--	--	0	--	--	--	1	53.0	32.0	-21.0	0	--	--	--	1	36.0	50.0	14.0
TOTAL	1	36.0	52.0	16.0.	328	30.9	32.9	2.0	234	32.0	30.6	- 1.4	5	33.4	27.8	- 5.6	158	30.2	29.6	- 0.6

Note. N = 726 students.

APPENDIX B

Table B-11

Attainment Status For Article 3 Pupils in Basic Skills Total Reading and Advanced Skills Reading Comprehension

Subject/ School	Grade 6 Normal Curve Equivalents				Grade 7 Normal Curve Equivalents				Grade 8 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
Total Reading												
Central	48	22.4	23.1	0.7	39	29.1	30.5	1.4	32	25.0	25.7	0.7
North	25	27.2	27.8	0.6	14	29.9	28.4	-1.5	7	32.8	29.2	-3.6
South	29	28.5	32.2	3.7	32	30.3	32.8	2.5	39	37.3	36.2	-1.1
Webber	40	23.9	20.2	-3.7	60	27.6	26.9	-0.7	36	27.7	27.0	-0.7
System	142	24.9	25.0	0.1	145	28.8	29.3	0.4	114	30.5	29.9	-0.6
Reading Comprehension												
Central	48	26.5	26.5	0.0	39	35.6	35.2	-0.4	32	31.7	28.1	-3.6
North	25	32.3	30.2	-2.1	14	34.1	34.2	0.1	7	38.2	31.4	-6.8
South	29	31.9	32.5	0.6	32	35.4	35.9	0.5	39	44.0	38.3	-5.7
Webber	40	27.2	22.6	-4.6	60	34.5	29.4	-5.1	36	31.7	27.5	-4.2
System	142	28.8	27.3	-1.5	145	34.9	32.9	-2.0	114	36.3	31.6	-4.7

Note. N = 401 students.

APPENDIX B

Table B-12

Attainment Status For Article 3 Pupils in Basic Skills Total Mathematics and Advanced Skills Mathematics Concepts and Applications

Subject/ School	Grade 6 Normal Curve Equivalents				Grade 7 Normal Curve Equivalents				Grade 8 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
Total Mathematics												
Central	39	29.4	24.4	-5.0	19	29.3	25.0	-4.3	20	28.8	24.6	-4.2
North	13	36.0	40.9	4.9	15	30.8	31.0	0.2	5	32.8	35.8	3.0
South	27	32.7	36.0	3.3	6	31.8	33.1	1.3	13	31.9	39.7	7.8
Webber	29	33.1	24.5	-8.6	40	28.4	24.7	-3.7	23	25.0	26.7	1.7
System	108	27.2	28.4	1.2	80	26.8	26.4	-0.4	61	28.4	28.1	-0.3
Concepts and Applications												
Central	39	25.0	24.2	-0.8	19	27.3	26.1	-1.2	20	28.7	24.4	-4.3
North	13	30.8	39.5	8.7	15	28.8	30.3	1.4	5	29.0	31.2	2.2
South	27	27.1	33.4	6.2	6	29.0	31.8	2.8	13	31.3	36.6	5.3
Webber	29	28.5	24.8	-3.7	40	25.4	24.4	-1.0	23	26.6	26.0	-0.6
System	108	32.0	29.3	-2.7	80	29.3	26.6	-2.7	61	28.3	29.5	1.2

Note. N = 249 students.

APPENDIX C

CHECKLIST FOR MIDDLE SCHOOL PRINCIPALS

(Conditions Under Which the HOTS Program is Effective for Chapter 1 and LD Students)

HOTS is a general thinking skills program designed primarily for Chapter 1 and mildly impaired Learning Disabled students in Grades 5-8. The thinking skills are designed to also enhance social interaction and basic skills. HOTS students are currently out-performing national averages for basic skill gains in reading and math, and the program has been validated by the National Diffusion Network.

HOTS represents a new approach to compensatory education. Instead of reteaching the information the students did not previously learn, HOTS provides the types of thinking skills that students need to be able to learn content the first time it is taught in the classroom. Producing basic skill gains, however, requires implementing the program in accordance with the recommendations that follow.

1. HOTS requires a very good teacher. A weak teacher simply cannot be successful. The pedagogical techniques are very sophisticated. The ideal teacher is someone who is very bright, energetic, flexible yet organized, and who above all loves to get kids to talk.

2. HOTS requires a good overall school improvement effort in the regular classroom. HOTS is designed to help a good, or improving, school get better. HOTS should not be implemented in a school with a weak staff, or where extensive school improvement has not already taken place. Since HOTS does not teach content, if the needed content is not covered in the regular classes, basic skills scores will not go up. This means high time-on-task, and quality direct instruction each day in reading and math activities aligned with test objectives.

3. Proper scheduling. The HOTS program is designed to substitute for, and replace, the remedial activities in the school. It needs a minimum of 35 minutes of instruction a day, 4 days a week, on an ongoing basis for 1½—2 years. This can be done either as a pullout or as a separate course. Schools that want to raise math scores can optionally use the fifth day, or 10-15 minutes at the end of each period, for computerized math drill and practice.

   Students should ideally be kept in the program for 1½—2 years, even if they test out at the end of the first year. This extra service is legal and helps students automate their new problem solving skills. First and second year HOTS students should be in separate sections.

   Students should be put into HOTS at the lowest grade level in the school (or when they first arrive). HOTS can be implemented either with a limited number of students, or as a school-wide model serving all needy students at the lowest grade level.

   A teacher can handle up to about 10 students at a time with 9 Apple II computers. A teacher and aide can handle up to about 16 students at a time with 13-15 computers.* Other pupil-teacher ratios with various combinations of personnel can be considered. HOTS project staff will assist in identifying other possible combinations.

   * (It's possible to do the program in the first year with a few less computers, but only for a year.)

4. Quality, classroom instruction available to HOTS students. It is critical that HOTS students get good content instruction in reading and math in their regular classes.

5. **Proper budgeting.** Costs include: a) purchasing the needed equipment from local vendors, and b) training and support costs. The training and support costs per school are as follows:

Number of students served	Up to 25	25-85	More than 85
First year *	$750	$900	$1100
Second year	300	400	600
Therea/ter	50	50	100

   * Includes the support fee for the school and training one HOTS teacher and aide. Each additional HOTS teacher adds $450 to the first year costs. (No added cost the second year).

   The support fee includes the curriculum, phone support, the HOTSTUFF newsletter, videotapes, and updates for as long as you use the program.

6. **General support by the principal.** There are a number of general leadership activities that increase the effectiveness of the program. The most important leadership activity is to implement and monitor a good overall school effectiveness program. It is also important to support the HOTS teacher who will have to work very hard, particularly the first year when the curriculum and techniques are unfamiliar. Additional support needs include:

   a) HOTS linkage activities consist of HOTS students writing eight questions and answers around a block of content every three weeks. These questions and answers are then brought to the HOTS lab and entered into the computer to make games and quizzes based on the content. Content teachers interested in working with the students on their writing of the questions in their class should be identified and encouraged to work with the HOTS students.

   b) Schedule presentations about HOTS for the entire staff early in the school year. This includes a 15 minute video overview of the program, and a 1½—2 hour workshop to train content area teachers on how to help students write questions. The latter should be conducted within the first three months by the HOTS teacher.

   c) Support public display of the HOTS students' prowess.

7. **Evaluating HOTS instruction.** DO NOT USE EEI EVALUATION TECHNIQUES. HOTS lessons are different. The best measure of the HOTS teacher's effectiveness is the number of complete answers he/she obtains from students—as opposed to one word answers—without giving obvious hints. The more one-word answers or hints, the weaker the lesson. There should be little talk by the teacher, and a lot by the students.

   DO NOT WORRY IF EARLY IN A UNIT STUDENTS SEEM CONFUSED ABOUT HOW TO PROCEED. Learning to use textual information to deal with uncertainty is one of the key skills that HOTS develops. The students will be successful by the end of the unit.

Feel free to contact Dr. Stanley Pogrow if you have further questions. Dr. Pogrow can be reached at: University of Arizona, College of Education, Tucson AZ 85721 or at (602) 621-1305.

E. PROGRAM DESCRIPTION

1. INSTRUCTIONAL COMPONENT (Check only ONE)

- [ ] [illegible]
- [ ] ELEMENTARY READING
- [ ] ELEMENTARY MATHEMATICS
- [ ] SECONDARY READING
- [ ] SECONDARY MATHEMATICS
- [X] OTHER (Specify) Home-School Aides

2. PROGRAM LOCATIONS
SCHOOLS SERVED: See list of eligible buildings on Page 2, Item A3.

GRADE LEVELS SERVED: 1-12

3. DESCRIPTION OF PROGRAM SERVICES

- [ ] Outside Regular Classroom
- [ ] Inside Regular Classroom
- [ ] Replacement Class
- [X] Other (describe) Home-School Aides

Chapter 1 Home-School Aides will assist the building principal and Chapter 1 staff in the accounting and monitoring of Chapter 1 students' attendance and academic progress. Activities will include: regularly scheduled home contacts, observation and notation of problems occurring in the home, assisting in the planning and organization of parent-teacher meetings, maintenance of attendance records for Chapter 1 students, and assisting the Chapter 1 and regular classroom teachers with mathematics and reading activities for Chapter 1 students.

4. AVERAGE WEEKLY TIME SERVED

5. COORDINATION PLAN

The Chapter 1 Home-School Aides will work with both Chapter 1 and regular teachers to provide information and assistance in working with Chapter 1 students and parents. Key factors in academic success such as attendance and problems occurring in the home will be monitored and this information will be shared with the building staff.

6. FTE CHAPTER 1 STAFF EMPLOYED IN THIS COMPONENT

_____ Teachers

26 Paraprofessionals Home-School Aides

_____ Other (describe) _____

E. PROGRAM DESCRIPTION

1. INSTRUCTIONAL COMPONENT (Check only ONE)

- [ ] PRE-K
- [ ] ELEMENTARY READING
- [ ] ELEMENTARY MATHEMATICS
- [ ] SECONDARY READING
- [ ] SECONDARY MATHEMATICS
- [X] OTHER (Specify) Staff Development

2. PROGRAM LOCATIONS
SCHOOLS SERVED: See list of eligible buildings on Page 3, Item A3.

GRADE LEVELS SERVED: 1-12

3. DESCRIPTION OF PROGRAM SERVICES

- [ ] Outside Regular Classroom
- [ ] Inside Regular Classroom
- [ ] Replacement Class
- [ ] Other (describe) _____

In mathematics, various inservice sessions at grades 1-6 will be conducted focusing on math manipulatives. In addition, some elementary teachers will be trained in the Reading Recovery method. Chapter 1 teachers in grades 7-9 will receive information and strategies related to the Thinking Skills Program.

4. AVERAGE WEEKLY TIME SERVED

5. COORDINATION PLAN

In mathematics, Chapter 1 teachers and classroom teachers will instruct students together in the classroom at grades 1-6 on a voluntary basis. As a result of the training received, Chapter 1 and classroom teachers will instruct students using the same information, strategies and materials.

6. FTE CHAPTER 1 STAFF EMPLOYED IN THIS COMPONENT

_____ Teachers

_____ Paraprofessionals

.8 Other (describe) Reading Recovery Teacher Trainer

E. PROGRAM DESCRIPTION

1. INSTRUCTIONAL COMPONENT (Check only ONE)

- [ ] PRE-K
- [ ] ELEMENTARY READING
- [ ] ELEMENTARY MATHEMATICS
- [ ] SECONDARY READING
- [ ] SECONDARY MATHEMATICS
- [X] OTHER (Specify) Pupil Service Team

2. PROGRAM LOCATIONS

SCHOOLS SERVED: See list of eligible buildings on Page 2, Item A3.

GRADE LEVELS SERVED: PreK-12

3. DESCRIPTION OF PROGRAM SERVICES

- [ ] Outside Regular Classroom
- [ ] Inside Regular Classroom
- [ ] Replacement Class
- [X] Other (describe)

Pupil Service Teams (consisting of counselors, social workers, and psychologists) will be established to provide Chapter 1 student assistance with academic, attendance, socio-emotional, and health problems. Services will include screening, diagnosis, evaluation, and intervention as necessary. In addition, the Pupil Service Teams will assist the families of students who have exhibited identified problems and will make referrals to appropriate agencies within the community.

4. AVERAGE WEEKLY TIME SERVED

5. COORDINATION PLAN

The Pupil Service Teams will provide information and training to parents, teachers, and principals on the purpose and services available from the teams. The Pupil Service Teams will coordinate their efforts with the Chapter 1 and regular education teachers to plan and implement alternative instructional methods, techniques, or adjustments which could be made in the classroom. Assistance will also be provided in dealing with socio-emotional and behavioral problems.

6. FTE CHAPTER 1 STAFF EMPLOYED IN THIS COMPONENT

_____ Teachers

_____ Paraprofessionals

7.5 Other (describe) (3.0 FTE Counselors, 2.5 FTE Social Workers, 2.0 FTE Psyc

E. PROGRAM DESCRIPTION

1. INSTRUCTIONAL COMPONENT (Check only ONE)

- ☐ PRE-K
- ☐ ELEMENTARY READING
- ☐ ELEMENTARY MATHEMATICS
- ☐ SECONDARY READING
- ☐ SECONDARY MATHEMATICS
- ☒ OTHER (Specify) Elementary After School/ Extended Day Program

2. PROGRAM LOCATIONS

SCHOOLS SERVED: See list of eligible buildings on Page 3, Item A3 — Program is voluntary

GRADE LEVELS SERVED: 1-6

3 DESCRIPTION OF PROGRAM SERVICES

- ☐ Outside Regular Classroom
- ☐ Inside Regular Classroom
- ☐ Replacement Class
- ☒ Other (describe) after School/Exten Day Program

The After School/Extended Day Program serves students who participate in the Chapter 1 Program during the regular school day. The program provides for additional instruction in reading and/or mathematics. Entry into the program is based on need. Class sizes range from 5 to 10 and operates for one hour after school, two to four days per week. The program focuses in on different approaches, use of computers, newspapers, narrative and expository materials, and manipulatives. Learning approaches and materials will focus on the development of both basic skills (e.g., vocabulary development, computation) and more advanced skills (e.g., comprehension, concepts and applications).

4. AVERAGE WEEKLY TIME SERVED: 2 to 4 hours

5. COORDINATION PLAN

After School/Extended Day teachers will reinforce, extend, and support classroom lessons in reading and mathematics and district-wide objectives in reading and mathematics at each grade level.

6. FTE CHAPTER 1 STAFF EMPLOYED IN THIS COMPONENT

80 Teachers — Participating teachers are paid on an hourly rate.

_____ Paraprofessionals

_____ Other (describe) _____

E. PROGRAM DESCRIPTION

1. INSTRUCTIONAL COMPONENT (Check only ONE)

- ☐ PRE-K
- ☐ ELEMENTARY READING
- ☐ ELEMENTARY MATHEMATICS
- ☐ SECONDARY READING
- ☐ SECONDARY MATHEMATICS
- ☒ OTHER (Specify) Secondary After School Tutoring Grades 7 through 9

2. PROGRAM LOCATIONS

SCHOOLS SERVED:	GRADE LEVELS SERVED
Central Jr, North Intermediate, Webber Jr.	7-9

3. DESCRIPTION OF PROGRAM SERVICES

- ☐ Outside Regular Classroom
- ☐ Inside Regular Classroom
- ☐ Replacement Class
- ☒ Other (describe) _____

The Secondary After School Tutoring Program serves students who participate in the Chapter 1 Program during the regular school day. The program provides for additional instruction in reading and/or mathematics. Class sizes range from 5 to 10 students per teacher and operate for one hour after school, for four days per week. Learning approaches and materials will focus on the development of both basic skills (e.g., vocabulary development, computation) and more advanced skills (e.g., comprehension, concepts and applications).

4. AVERAGE WEEKLY TIME SERVED 1 to 4 hours

5. COORDINATION PLAN

The Secondary After School Tutoring Program will reinforce, extend, and support classroom lessons and district-wide objectives in reading and mathematics at each grade level.

6. FTE CHAPTER 1 STAFF EMPLOYED IN THIS COMPONENT

6 Teachers — Participating teachers are paid on an hourly rate.

_____ Paraprofessionals

_____ Other (describe) _____

E. PROGRAM DESCRIPTION

1. INSTRUCTIONAL COMPONENT (Check only ONE)

- [ ] [illegible]
- [ ] ELEMENTARY READING
- [ ] ELEMENTARY MATHEMATICS
- [ ] SECONDARY READING
- [ ] SECONDARY MATHEMATICS
- [X] OTHER (Specify) Project Success

2. PROGRAM LOCATIONS

SCHOOLS SERVED: See list of eligible buildings on Page 2, Item A3.

GRADE LEVELS SERVED: 1-12

3. DESCRIPTION OF PROGRAM SERVICES

- [ ] Outside Regular Classroom
- [ ] Inside Regular Classroom
- [ ] Replacement Class
- [X] Other (describe) Project Success

Project Success will focus in on those students who have not made any academic gains in the past two years and for whom a special plan for assistance must be developed. Activities will include: establishment of study centers in churches and community centers, recruitment of business and industry for mentors and an Adopt-A-School Program, recruitment of other volunteers to assist with the program, providing information and training to parents, and making referrals to other agencies in the community.

4. AVERAGE WEEKLY TIME SERVED

5. COORDINATION PLAN

Project Success staff will work with Chapter 1, regular education teachers and Pupil Service Team to identify, assess, and develop plans for student program improvement for students who have not gained in performance for the past two years.

6. FTE CHAPTER 1 STAFF EMPLOYED IN THIS COMPONENT

_____ Teachers

_____ Paraprofessionals

5 Other (describe) 1.0 FTE Project Success Specialist and 4.0 FTE Outreach Workers

APPENDIX E

Figure E-1

1993-94 Chapter 1/Article 3 Buildings to Submit Reading and/or Mathematics Plans of Improvement [a]

	READING		MATHEMATICS	
	Basic Skills	Advanced Skills	Basic Skills	Advanced Skills
MIDDLE SCHOOL				
Central Middle	X	X	X	X
North Middle	X	X		X
South Middle	X	X		
Webber Middle	X	X	X	X
ELEMENTARY				
Baillie	X	X	X	X
Coulter				X
Emerson		X		X
Fuerbringer	X	X	X	X
Nelle Haley	X	X		X
Heavenrich				X
Herig				
Houghton	X	X	X	X
Jerome	X	X		X
Jones	X	X		X
Kempton	X	X		
Longfellow				X
Longstreet	X	X		X
J. Loomis	X	X	X	X
Merrill Park	X	X		X
Chester Miller	X	X		X
John Moore	X	X	X	X
Morley				
J. Rouse	X	X		X
Salina	X	X		X
Stone				X
Webber Ele.				X
Zilwaukee			X	X

Note. X = Aggregate gain three NCE units or less.

[a] Chapter 1 evaluation rules require "plans of improvement" from buildings experiencing gains of three NCE units or less in one or more skill/subject areas across all grades served. This requirement may not be necessary if:

- The school served 10 or fewer Chapter 1/Article 3 students in that year;
- The standardized test results for a particular year are invalid or unreliable, as a result of measurement-related factors such as changing to a newer test edition; or
- Other administrative guidelines set forth by the state apply.

REFERENCES

CTB/McGraw-Hill (1993). California Achievement Tests, Fifth Edition (CAT-5). CTB: Monterey, California.